

Patent claims

1. A method for determining the quality of milk wherein a sample is examined, characterized in that the type of at least one detected object is determined on the basis of at least one object recognition rule.
2. The method according to claim 1 wherein at least one object is extracted from the sample.
3. The method according to claim 1 or 2 wherein a distinction is made between the object types particle object and non-particle object.
4. The method according to claim 1, 2 or 3 wherein a distinction is made between the object types mineral particle object and biological particle object.
5. The method according to claim 3 or 4 wherein the object type non-particle object comprises the object types bubble object and/or reflection object and/or defect object.
6. The method according to at least one of the preceding claims, wherein at least one portion of interest is identified which is characteristic of at least one object.
7. The method according to the previous claim wherein at least one boundary locating routine is performed to determine objects.
8. The method according to at least one of the preceding claims wherein at least one parameter is specified.
9. The method according to at least one of the preceding claims wherein at least one parameter is captured optically.
10. The method according to at least one of the preceding claims wherein at least one parameter is derived from the lightness.

11. The method according to at least one of the preceding claims wherein at least one parameter is derived from the outer contour of an object.
12. The method according to at least one of the preceding claims wherein at least one contrast is employed to specify at least one parameter.
13. The method according to at least one of the preceding claims wherein at least one color is employed to specify at least one parameter.
14. The method according to at least one of the preceding claims wherein at least two parameters are used to determine an object type of a detected object.
15. The method according to at least one of the preceding claims wherein fuzzy logic is used to determine from at least two parameters an object type of at least one detected object.
16. The method according to at least one of the preceding claims wherein gradient formation is performed in view of at least one physical quantity, preferably selected from the group of optical, acoustical and/or electrical properties, in particular the hue, intensity, saturation, electrical conductivity, electrical capacity, reflection and transmission.
17. The method according to at least one of the preceding claims wherein at least one characteristic value of at least one object is determined.
18. The method according to at least one of the preceding claims wherein the at least one parameter is determined through incident lighting and/or transmissive read.
19. The method according to at least one of the preceding claims wherein first the milk quality is determined and thereafter the milk is either routed to the marketable milk container or discarded.
20. The method according to at least one of the preceding claims wherein at least a predetermined quantity of milk is routed into a measuring chamber having at least one acquisition unit, at least part of the liquid phase of the milk in the

measuring chamber is then drained out of the measuring chamber and then at least a portion of the measuring chamber surface is captured.

21. The method according to at least one of the preceding claims wherein at least a predetermined quantity of milk is routed through a measuring chamber comprising at least one capturing unit, wherein a film is preferably formed and the measuring surface captured.
22. The method according to at least one of the preceding claims wherein the objects are isolated out of the sample.
23. The method according to at least one of the preceding claims wherein the frequency of individual object types is determined.
24. The method according to at least one of the preceding claims wherein a quality grade is derived from the frequency of individual object types and/or the object sizes of the different object types.
25. A method for recognizing objects in milk,
characterized in that
a milk sample to be examined is routed onto a measuring surface and an image of the measuring surface is captured, and at least one object recognition rule is employed to distinguish between at least two types of detected objects.
26. The method of the preceding claim wherein particles are detected.
27. A device for determining the quality of milk, comprising
a measuring chamber into which a sample can be routed,
a detector means for capturing at least a portion of the measuring chamber,
a determination means which is suitable for determining a type of an object in the sample on the basis of at least one predefined object recognition rule.
28. The device according to claim 27, characterized by an identification means to identify at least one portion of interest which portion of interest is characteristic for an object.

29. The device according to claim 27 or 28, characterized by an extraction means for extracting a fault image from an image of the sample and a reference image wherein the fault image is employed for determining the at least one parameter.
30. The device according to at least one of the claims 27 to 29, characterized in that a selection unit is provided such that depending on the quality, the milk is either routed to the marketable milk container or it is discarded.
31. The method according to one of the claims 27 to 30, characterized in that at least a predetermined quantity of milk is routed into a measuring chamber having at least one capturing unit, at least part of the liquid phase of the milk in the measuring chamber is then drained out of the measuring chamber and then at least a portion of the measuring chamber surface is captured.
32. A method for providing a classification database for classifying objects in milk comprising the following steps;
providing a reference image of a milk sample,
providing at least one image of at least one object,
extracting at least one fault image from the reference image and the image of an object,
providing a typing code,
determining characteristic properties of objects in the fault image,
storing the characteristic properties to an object type of the typing code.